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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/543,058

07/21/2005

Reinhold Carle

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3911

23117

7590

04/30/2008

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EXAMINER

WEBB, WALTER E

ART UNIT

PAPER NUMBER

1612

MAIL DATE

DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/543,058	Applicant(s) CARLE ET AL.	
	Examiner WALTER E. WEBB	Art Unit 1612	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 July 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>7/21/2005</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-9, 12, 13 and 15-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jensen et al., (WO 1991/06292) in view of Langen et al., (US 3595676).

Jensen et al. teach a process of preparing a hydrophobic/aerophillic solid which can be dispersed in water in the form of discrete microparticles. The solid is milled in an aqueous medium in the presence of a hydrocolloid e.g. pectin, where antioxidants such

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as tocopherol may be added to the suspension. (See pg. 4 lines 6-14; see also pg. 4 lines 35-38.) Solid hydrophobic/aerophilic materials can be milled and encapsulated include carotenoids such as β -carotene. (See pg. 4, lines 25-27.) The resulting suspension is finely divided and dried by conventional methods, such as spray cooling, spray drying or sheet drying etc. (See pg. 5, lines 24-26.) In the spray drying, cooling and modified spray drying processes excipients such as tricalcium phosphate, stearate calcium etc. may be used. (See pg. 7, lines 1-5.) They teach that the suspension may be emulsified in an oil, washed and dried/spray dried or extruded, drum dried and crushed. (See pg. 7, lines 6-12.)

They teach a composition where the resulting product, a dry powder, contained 10.5% by weight of β -carotene. The amount of hydrocolloid, here 240 Bloom, was about 64%, excluding water. The composition also contained α -tocopherol at 0.33%, excluding water, as per claims 8 and 9. (See Example 11 pp. 13-14.)

Jensen differs from the instant claims insofar as it does not teach that the pectin has a degree of esterification below 50%, or between 30 and 45% and between 60 and 75% of galacturonic acid.

Langen et al. teach that pectins of a high degree of esterification pose a disadvantage in that they form gels prematurely in hot conditions causing a retardation of the dissolution of the pectin. They teach using pectins with a medium or low degree of esterification between about 60 and 38. (See col. 4, lines 18-32.) They teach that the medium or low esterified pectin can be apple pectin or citrus pectin. (See col. 9, lines 1-6.)

As per claim 3, it is known in the art that apple pectin that has been de-esterified has 65% galacturonic acid, when precipitated by ethanol.¹

It would have been obvious to a person having ordinary skill in the art at the time of applicant's invention to use the pectin of Langen in the process and compositions of Jensen, since Langen teaches that low esterified pectin has an advantage over high esterified pectin in that it will not gel prematurely.

Claims 10-11 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jensen et al., (*supra*) in view of Langen et al., (*supra*) as applied to claims 1-9, 12, 13 and 15-19 above, and further in view of Cox et al., (US 6,007,856).

Jensen and Langen taken together differs from the instant claims 10, 11, and 14 insofar as they do not teach the carotenoid to oil ratios of claims 10-11 or that the dispersion can be a fruit juice, vegetable juice, sauce/puree, fruit or vegetable drink or sports drink.

Cox et al., teach oil-in-water dispersions of β -carotene which are useful in juice beverages. (See abstract.) They teach that the ratio of oil phase to carotenoid affects the oxidation of β -carotene and that an oil to carotenoid ratio of 10:1 will be stable against oxidation. (See col. 4, line 63 through line 4 of col. 5.)

Because the composition(s) taught in Jensen can be dispersed in water, it would be obvious to a person having ordinary skill in the art at the time of applicant's invention to use the dispersion on a beverage, especially since Cox et al. teach that β -carotene is

¹ See Zitko et al., Canadian Journal of Chemistry 1965:43(12) at pg. 3211, Table III.

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often included in foods and beverages as a colorant. (See col. 1, lines 20-31.) It would have also been obvious to adjust the oil to caratenoid ratio of Jensen to 10:1, since Cox teaches that this will help maintain the β -carotene.

Conclusion

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Walter E. Webb whose telephone number is (571) 270-3287. The examiner can normally be reached on 8:00am-4:00pm Mon-Fri EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frederick F. Krass can be reached (571) 272-0580. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Walter E. Webb
Patent Examiner
AU 1612

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/Frederick Krass/

Supervisory Patent Examiner, Art Unit 1612